



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/890,986	08/08/2001	Max Bachmann	ZAHFRI- P356U	1807

20210 7590 01/31/2003

DAVIS & BUJOLD, P.L.L.C.  
FOURTH FLOOR  
500 N. COMMERCIAL STREET  
MANCHESTER, NH 03101-1151

EXAMINER

PEREZ, GUILLERMO

ART UNIT PAPER NUMBER

2834

DATE MAILED: 01/31/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/890,986

Applicant(s)

BACHMANN, MAX

Examiner

Guillermo Perez

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 25-44 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 25-44 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 8/8/01 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 8/8/01 is: a) ☒ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4,8. 6) ☐ Other: .

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 25-26, 32-35, 41-44 are rejected under 35 U.S.C. 102(b) as being anticipated by A. M. Harrelson (U. S. Pat. 1,582,019).

Referring to claim 25, A. M. Harrelson discloses an electrical machine with an externally situated stator and an inward disposed rotor which is rotationally supported on bearings and has a rotor shaft which is rotationally fixed with a rotor laminate pack and the rotor shaft is hollow or, possesses between the rotor laminate pack and itself a hollow interposed shaft, upon which the rotor laminate pack is placed, wherein the rotor shaft (8) has a cross-sectional shape of three sickle shaped webs (11) which allow a large quantity of cooling medium to pass between the rotor shaft and the interposed shaft, i.e. the rotor laminate pack, and allows formation of a large heat transfer surface with a simultaneous endurance to stress energy upon placing the rotor shaft in the rotor laminate pack or in the interposed shaft.

Referring to claim 26, A. M. Harrelson discloses that the rotor shaft and the hollow, interposed shaft contact one another only along a linear contact zone to form smaller heat transfer areas.

Referring to claim 32, 41, A. M. Harrelson discloses that an element is provided for a turbulence-free guided flow of the cooling medium.

Referring to claim 33, A. M. Harrelson discloses that the cooling medium is air.

Referring to claim 34, A. M. Harrelson discloses that for the construction of a rotor shaft, which can allow a large quantity of cooling medium to flow between the rotor shaft and the interposed shaft and yet be constructed, at the same time, with sufficient structural strength, and the cross-section of the rotor shaft is in the shape of a star with four webs.

Referring to claim 35, A. M. Harrelson discloses that for the construction of a rotor shaft, which allows a large quantity of cooling medium to pass between the rotor shaft and the interposed shaft and for the provision of a relatively large heat transfer surface at the same acceptance of stress energy, the rotor shaft is in the shape of three sickle shaped webs.

Referring to claim 42, A. M. Harrelson discloses a heat exchanger is integrated into the electrical machine.

Referring to claim 43, A. M. Harrelson discloses that the heat exchanger possesses cooling tubes which encompass the stator.

Referring to claim 44, A. M. Harrelson discloses that the cooling tubes are located in heat transferring connection with the cooling ribs.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 2834

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 27, 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over A. M. Harrelson in view of Lulay (DE 2655573).

A. M. Harrelson substantially teaches the claimed invention except that it does not show that the webs are interrupted along their entire length so as not to lie upon the interposed shaft.

Lulay discloses that the webs are interrupted along their entire length so as not to lie upon the interposed shaft. Lulay's invention has the purpose of providing heat dissipation in the circumferential as well as in the axial rotor direction.

It would have been obvious at the time the invention was made to modify the machine of A. M. Harrelson and provide it with the web configuration disclosed by Lulay for the purpose of providing heat dissipation in the circumferential as well as in the axial rotor direction.

3. Claims 28, 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over A. M. Harrelson in view of Potter et al. (U. S. Pat. 3,562,564).

A. M. Harrelson substantially teaches the claimed invention except that it does not show that the rotor shaft was designed in the form of a screw conveyor. A. M. Harrelson does not disclose that the rotor shaft is made from one of a separate forged component and by a precision molding and is pressed into the hollow interposed shaft to achieve a force fit. Harrelson does not disclose that the rotor shaft is manufactured

from one of a separate forged part and a precision cast part and is pressed into the hollow interposed shaft to achieve a press fit.

Potter et al. disclose that the rotor shaft (17) was designed in the form of a screw conveyor (20). The invention of Potter et al. has the purpose of improving heat dissipation for the diodes, by providing a fluid path connecting the diodes heat sink with the rotor shaft, and an exterior fluid heat dissipator.

It would have been obvious at the time the invention was made to modify the machine of A. M. Harrelson and provide it with shaft configuration disclosed by Potter et al. for the purpose of improving overall heat dissipation of the machine.

Referring to claim 20, no patentable weight has been given to the method of manufacturing limitations (i. e. "force fit into") since "even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

4. Claims 29-31, 38-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over M. Harrelson in view of Scherzinger et al. (U. S. Pat. 4,943,746).

A. M. Harrelson substantially teaches the claimed invention except that it does not show that the rotor shaft is made from a material of relatively low heat conductivity.

A. M. Harrelson does not disclose that the material of relatively low heat conductivity is a highly alloyed steel. A. M. Harrelson does not disclose that the material of poor heat conductivity is titanium.

Scherzinger et al. disclose that the rotor shaft is made from a material of poor heat conductivity. Scherzinger et al. disclose that the material of poor heat conductivity is a highly alloyed steel. Scherzinger et al. disclose that the material of poor heat conductivity is titanium (column 6, lines 20-26). The invention of Scherzinger et al. has the purpose of improving heat dissipation in the dynamoelectric machine.

It would have been obvious at the time the invention was made to modify the machine of A. M. Harrelson and provide it with the materials disclosed by Scherzinger et al. for the purpose of improving heat dissipation in the dynamoelectric machine.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

### **Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Guillermo Perez whose telephone number is (703) 306-5443. The examiner can normally be reached on Monday through Thursday and alternate Fridays.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on (703) 308 1371. The fax phone

Art Unit: 2834

numbers for the organization where this application or proceeding is assigned are (703) 305 3432 for regular communications and (703) 305 3432 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308 0956.

Guillermo Perez  
Monday, January 27, 2003



GUILLERMO PEREZ  
SUPERVISOR OF EXAMINER  
TECHNICAL UNIT 2834